

1962



CANADA

## IRON ORE

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The decreasing level of iron ore shipments, evident since 1959, was sharply reversed in 1962 when total shipments reached an all-time high of 24,909,565 tons\*\*, up 37 per cent from 1961; output of all producing provinces was higher. Although over-all shipments surpassed previous records, lower shipments and softer prices continued for some companies. This reflected increased competition and a generally stagnant, increasingly captive, international market. Most companies intensified their ore-research programs during the year and continued producing a beneficiated product for marketing rather than 'direct-shipping' ore.

During 1962, three new operations in British Columbia and one in Labrador commenced production. Another company announced plans to commence production by 1964 from a new operation in Ontario while another continued to develop a project in Labrador for production by 1965. As a result, Canadian iron ore productive capacity increased during 1962 from 26 million to nearly 30 million tons. By 1965, the productive capacity is expected to approach 45 million tons. The designed capacity of Canadian iron ore mines and mills in existence at the end of 1962 was approximately 38 million tons. Since two large mills were still in the process of tuneup there was a considerable difference between productive capacity and designed capacity.

In Quebec, a new producer of high-grade concentrates in 1961 shipped approximately 4.5 million tons in 1962 compared with 1.2 million tons the previous year. A substantial increase in shipments by a traditional producer of medium-grade ore in the Schefferville area also contributed to the total increase. This company increased shipments from mines on the Labrador side of the provincial boundary near Schefferville, Quebec, and commenced shipments of high-grade concentrate from new facilities near Labrador City, Labrador. Although production increased from the Labrador area of Newfoundland, the long-established producer of medium-grade ore in Newfoundland experienced a relatively poor year because of increased competition in its main market, western Europe.

In Ontario, most producers of medium- and high-grade ores had a satisfactory year; one producer in the Steep Rock Lake area increased its shipments by about one million tons as it approached its designed capacity. The traditional

\*Mineral Resources Division.

\*\*The long or gross ton of 2,240 pounds is used throughout unless otherwise noted.

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TABLE 1

IRON ORE - PRODUCTION AND TRADE

	1962p		1961	
	Long Tons	\$	Long Tons	\$
<b>PRODUCTION (shipments)</b>				
Quebec .....	10,343,301	115,846,100	5,035,653	53,627,608
Newfoundland .....	6,914,754	63,868,120	6,795,839	59,889,125
Ontario .....	5,939,581	67,177,400	5,154,164	62,350,773
British Columbia ...	1,711,929	17,716,830	1,192,025	12,082,541
Total .....	24,909,565	264,608,450	18,177,681	187,950,047
Byproduct iron ore in above .....	350,804	-	382,530	-
Byproduct iron ore(a) ..	343,428	-	329,263	-
Ilmenite ore(b) .....	665,851	-	1,032,122	-
<b>IMPORTS</b>				
	(First 9 Months)		(12 Months)	
United States .....	3,691,684	45,521,332	3,959,192	45,579,195
Brazil .....	75,495	729,462	172,713	1,851,460
Italy .....	-	-	300	1,213
Netherlands .....	-	-	75	1,185
Total .....	3,767,179	46,250,794	4,132,280	47,433,053
Estimate for 12 months .....	4,670,000	57,300,000		
<b>EXPORTS</b>				
<u>Iron ore, direct shipping(c)</u>				
United States .....	9,513,573	90,063,625		
Britain .....	1,520,818	13,916,270		
Netherlands .....	447,053	4,021,174		
West Germany .....	243,276	2,210,783		
Total .....	11,724,720	110,211,852		
<u>Iron ore, concentrate(c)</u>				
United States .....	6,028,240	70,065,698		
Japan .....	1,544,523	14,610,173		
West Germany .....	275,090	1,788,182		
Belgium and Luxembourg .....	261,520	2,455,808		
Britain .....	147,979	975,414		
Netherlands .....	121,113	904,755		
Italy .....	89,146	579,449		
France .....	23,190	221,465		
Total .....	8,490,801	91,600,944		

Table 1 (Cont'd.)

	1962p		1961	
	Long Tons	\$	Long Tons	\$
<b>EXPORTS (Cont'd)</b>				
<u>Iron ore, agglomerate (c)</u>				
United States .....	1,212,033	15,308,527		
<u>Iron ore, not elsewhere specified including by-product iron ore (c)</u>				
United States .....	190,573	3,248,701		
West Germany .....	27,631	151,971		
Total .....	218,204	3,400,672		
<u>Total Exports Iron ore, all classes</u>				
United States .....	16,944,419	178,686,551	9,380,832	96,709,353
Britain .....	1,668,797	14,891,684	2,314,562	20,227,324
Japan .....	1,544,523	14,610,173	1,159,361	10,152,146
Netherlands .....	568,166	4,925,929	725,925	6,335,673
West Germany .....	545,997	4,150,936	821,820	5,556,920
Belgium and Luxembourg .....	261,520	2,455,808	348,175	2,729,519
Italy .....	89,146	579,449	104,036	754,815
France .....	23,190	221,465	11,955	90,857
Trinidad .....	-	-	1,500	9,375
Total .....	21,645,758	220,521,995	14,868,166	142,565,982

Sources: Dominion Bureau of Statistics and supplementary data from individual companies.

(a) Total of shipments of by-product iron ore compiled from data supplied by individual companies to the Mineral Resources Division. Difference with DBS data is due to variations in industry classifications.

(b) Ilmenite ore used to produce titania slag and pig iron.

(c) Not available as a separate class prior to 1962.

Symbols: p Preliminary; - Nil.

TABLE 2

IRON ORE - PRODUCTION, TRADE AND CONSUMPTION, 1952-62  
(long tons)

	Production (shipments)	Imports	Exports	Consumption (indicated)
1952	4,707,008	3,810,409	3,434,820	5,082,597
1953	5,812,337	3,721,046	4,303,549	5,229,834
1954	6,572,855	2,709,991	5,470,480	4,812,366
1955	14,538,551	4,052,490	13,008,000	5,583,041
1956	19,953,820	4,525,768	18,094,080	6,385,508
1957	19,885,870	4,052,704	17,972,769	5,965,805
1958	14,041,360	3,047,301	12,391,314	4,697,347
1959	21,864,576	2,500,894	18,552,488	5,812,982
1960	19,241,813	4,514,596	16,942,140	6,814,269
1961	18,177,681	4,132,280	14,868,166	7,441,795
1962	24,909,565	na	21,645,758	na

Source: Dominion Bureau of Statistics.

\*Shipments plus imports less exports with no account taken of changes in stocks at consuming plants.

Symbols: na Not available; p Preliminary.

producer of medium-grade ore in the Steep Rock Lake area experienced its lowest output year since the late 1940's because of increased competition that was due, primarily, to a weakening of the non-captive merchant ore market in the United States.

In British Columbia, the number of high-grade concentrate producers doubled to six. Reserves of one of the older producers were almost depleted by the end of 1962.

## MARKETS AND TRADE

There are five main market areas for Canadian iron ore - the United States, Britain, western Europe, Japan and Canada. The United States is the principal market, the level of ore consumption there improving slightly during 1962 from the two previous years. The consumption of non-Canadian ore in the United States increased only slightly compared with the great increase in imports and consumption of Canadian ore. The main reason for this was a high level of production by Canada's three largest iron-ore producers that are integrated with United States steel companies. Non-captive ore sales by these and other Canadian producers, except those in British Columbia, tended to weaken.

In western Europe, steel production by most countries tended to level off or decline slightly after a decade of continuous growth. An upturn was expected before the end of 1962 although no positive trend was evident.

Exports from Canada in 1962 to all customers in Europe decreased except for relatively small increases to Italy and France. A large part of the net decrease in exports was experienced by one company whose ore is particularly subject to rigorous competition from new, higher-grade sources in Africa and South America.

In Japan, the high and rapidly increasing ore-consumption rate levelled off unexpectedly early in 1962 to the extent that planned imports for the year were reduced by about 20 per cent. Canadian producers were affected by this reduction. Despite the cutbacks, there was a substantial increase in exports from British Columbia, the sole Canadian supplier to Japan, because of deliveries on previously negotiated contracts.

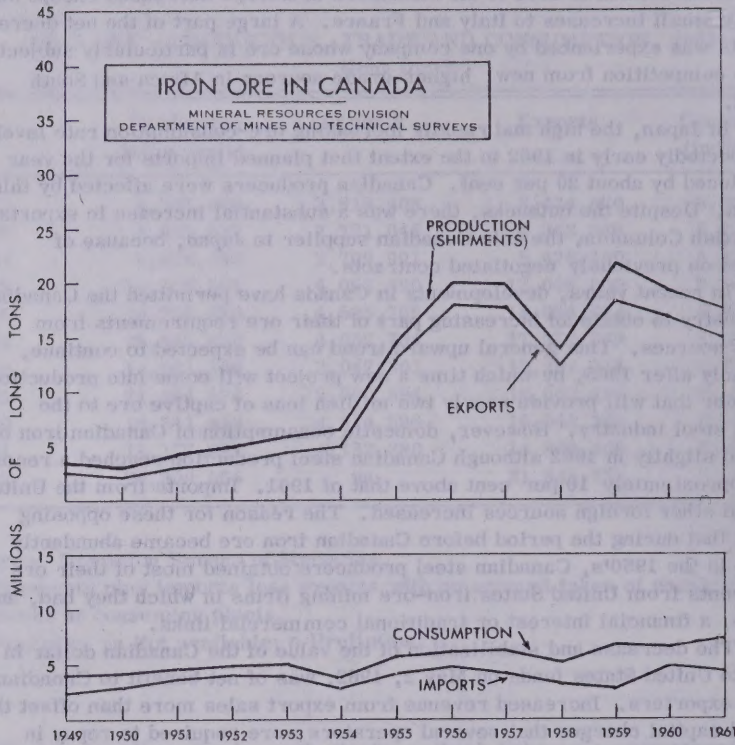
In recent years, developments in Canada have permitted the Canadian steel industry to obtain an increasing part of their ore requirements from domestic sources. This general upward trend can be expected to continue, particularly after 1965, by which time a new project will come into production in Labrador that will provide nearly two million tons of captive ore to the Canadian steel industry. However, domestic consumption of Canadian iron ore decreased slightly in 1962 although Canadian steel production reached a record level - approximately 10 per cent above that of 1961. Imports from the United States and other foreign sources increased. The reason for these opposing trends is that during the period before Canadian iron ore became abundantly available in the 1950's, Canadian steel producers obtained most of their ore requirements from United States iron-ore mining firms in which they had, and still have, a financial interest or traditional commercial links.

The decrease and stabilization of the value of the Canadian dollar in relation to United States funds on May 2, 1962, was of net benefit to Canadian iron-ore exporters. Increased revenue from export sales more than offset the additional capital charges that several operators were required to repay in foreign currency. The net benefit to several producers, however, was largely dissipated by the lower base price for sales of direct-shipping ore in North America. In addition, competition in the European markets from other exporting countries increased the pressure on prices received for Canadian direct-shipping and high-grade beneficiated ore.

## WORLD PRODUCTION

The countries listed in Table 3 accounted for approximately 80 per cent of the world's 1961 iron-ore output. Estimates of 1962 production indicate that USSR production continued to increase while that of the United States and France remained about the same as in 1961. Canada displaced Sweden as the fifth leading producer. Production in Britain, Venezuela and West Germany decreased.

The decline in production in West Germany was a result of several planned mine closures as greater quantities of high-grade imports are used. The decline in production in Venezuela which began after 1960 following a decade of continuous growth, is of particular significance.



### DOMESTIC CONSUMPTION

Iron ore is used primarily as a raw material in the making of iron and steel. Small tonnages, not primarily referred to as iron ore, are used in the manufacture of paint, as heavy aggregate in concrete, as heavy media in some beneficiation plants, and for agricultural purposes. Most of the iron ore is made into pig iron, some of which is used by iron foundries. Most pig iron, however, along with steel scrap goes into the production of crude steel. Some iron ore is also used in steelmaking furnaces. Table 4 summarizes statistics on the consumption of iron ore in Canadian iron and steel plants.

TABLE 3

PRODUCTION OF IRON ORE, BY COUNTRY  
(<sup>1</sup>000 long tons)

	1959	1960	1961	1962 <sup>e</sup>
USSR .....	92,900	105,310	116,137	125,200
United States .....	60,276	88,784	71,543	71,000
France .....	59,956	65,854	66,324	65,640
China .....	44,300	54,100	59,053	na
Canada .....	21,865	19,215	18,178	24,910
Sweden .....	17,999	20,975	22,647	21,920
Britain .....	14,872	17,056	16,521	15,400
Venezuela .....	17,018	19,182	15,255	13,620
West Germany.....	17,778	18,571	18,568	11,360
Subtotal .....	346,964	409,047	404,226	na
Other countries.....	84,745	98,042	100,490	na
World total .....	431,709	507,089	504,716	na

Source: American Iron and Steel Institute, Annual Statistical Report for 1961.

<sup>e</sup>Estimated from various sources, particularly the UN Monthly Bulletin of Statistics.

na Not available.

TABLE 4

CONSUMPTION OF IRON ORE IN CANADIAN IRON AND STEEL PLANTS  
(long tons)

	1962	1961
In blast furnaces, direct .....	5,952,476	5,388,755
In steel furnaces, direct .....	322,083	353,875
In sintering plants before ore is charged to blast or steel furnaces .....	1,442,582	1,400,259
Miscellaneous .....	6,180	59
Total.....	7,723,321	7,142,948

Source: American Iron Ore Association, Cleveland, Ohio.

TABLE 5

CANADIAN CONSUMPTION OF IRON ORE AND PRODUCTION OF  
PIG IRON AND CRUDE STEEL  
(long tons)

	1962	1961
Total receipts at iron and steel plants(a) .....	7,390,362	7,159,660
Receipts imported(a) .....	4,684,012	4,173,955
Receipts from domestic sources(a) .....	2,706,350	2,985,705
Consumption of iron ore (a,b) .....	7,723,321	7,142,948
	(net tons)	(net tons)
Pig-iron production(c) .....	5,288,589	4,925,395
Capacity at Dec. 31(c) .....	5,450,900	5,240,900
Steel-ingot and castings production(c) .....	7,173,475	6,466,324
Capacity at Dec. 31(c) .....	8,614,000	8,313,400
Stocks at iron and steel plants	Change from Previous Year	
Dec. 31, 1961	3,487,587	+ 24,147
Dec. 31, 1962	3,211,404	-287,183

(a) American Iron Ore Association, Cleveland, Ohio.

(b) Consumption figures are compiled from company submissions and cannot be calculated from the statistics shown in this table.

(c) Dominion Bureau of Statistics.

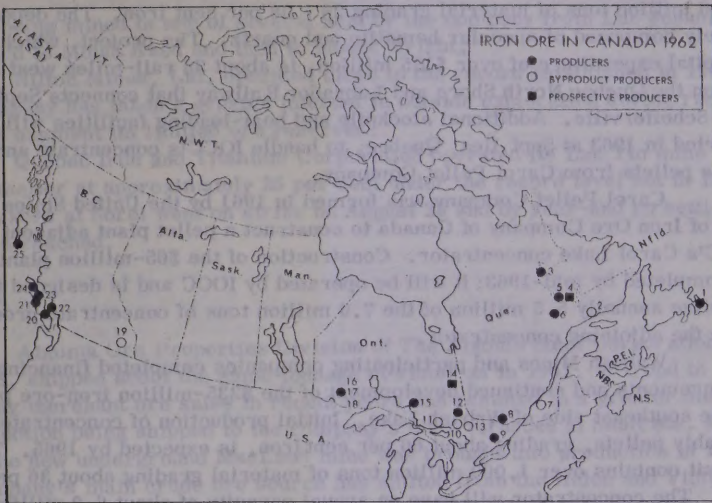
CANADIAN DEVELOPMENTS

Newfoundland

Wabana Mines Division of Dominion Steel and Coal Corporation, Limited experienced increased difficulty in the western European market despite a more intensive sales program and continuing efforts to increase mine efficiency.

Labrador (Newfoundland)

Iron Ore Company of Canada's (IOCC) Carol Lake project brought into production in July 1962, was the highlight of mine developments during the year. The operation is near the new town of Labrador City on the west side of Wabush Lake. It was designed to mine and process annually approximately 18 million tons of crude ore, grading 37.5 per cent iron, to produce seven million tons of concentrate, grading about 64.5 per cent iron. The Smallwood deposit, which is being mined on ground subleased from Labrador Mining and Exploration Company Limited, is one of several the company holds in the area. The deposits held by the company are conservatively estimated to contain more than



MINERAL RESOURCES DIVISION  
DEPARTMENT OF MINES AND TECHNICAL SURVEYS

### PRODUCERS

Algoma Steel Corporation, Limited, The (Algoma Ore Properties Division)	15	Iron Ore Company of Canada (Schefferville)	3
Brynnor Mines Limited	20	Iron Ore Company of Canada (Labrador City)	5
Caland Ore Company Limited	16	Jedway Iron Ore Limited	25
Canadian Charleson, Limited	17	Lowphos Ore, Limited	12
Dominion Steel and Coal Corporation, Limited (Wabana Mines Division)	1	Marmoraton Mining Company, Ltd.	9
Empire Development Company, Limited	24	Nimkish Iron Mines Ltd.	23
Hilton Mines, Ltd.	8	Quebec Cartier Mining Company	6
		Steep Rock Iron Mines Limited	18
		Texada Mines Ltd.	22
		Zeballos Iron Mines Limited (1962)	21

### BYPRODUCT PRODUCERS

Consolidated Mining and Smelting Company of Canada Limited, The (mines and plant)	19	Falconbridge Nickel Mines, Limited (mines and plant)	13
Cutler Acid Limited (plant)	11	Quebec Iron and Titanium Corporation (mine)	2
International Nickel Company of Canada, Limited, The (mines and plant)	10	Quebec Iron and Titanium Corporation (plant)	7

### PROSPECTIVE PRODUCERS (by 1965)

Jones & Laughlin Steel Corporation (1964)	14	Wabush Mines Project (1964-65)	4
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1,500 million tons of material grading 36 - 38 per cent iron. The deposits are largely composed of specular hematite and quartz. The project, which required a capital expenditure of over \$125 million, is about 38 rail-miles west of Mile 224 on the Quebec North Shore and Labrador Railway that connects Sept Iles with Schefferville. Additional stockpile and boat-loading facilities will be constructed in 1963 at Sept Iles, Quebec, to handle IOCC's concentrate and high-grade pellets from Carol Pellet Company.

Carol Pellet Company was formed in 1961 by the United States principals of Iron Ore Company of Canada to construct a pellet plant adjacent to IOCC's Carol Lake concentrator. Construction of the \$65-million plant is to be completed by mid-1963; it will be operated by IOCC and is designed to pelletize annually 5.5 million of the 7.0 million tons of concentrate produced from the adjoining concentrator.

Wabush Mines and participating companies completed financing arrangements and continued development of the \$235-million iron-ore project on the southeast side of Wabush Lake. Initial production of concentrates, and probably pellets, grading about 66 per cent iron, is expected by 1965. The deposit contains over 1,000 million tons of material grading about 36 per cent iron. The concentrator will have an annual capacity of about 6.0 million tons. The harbor and boat handling facilities at Pointe Noire, across the bay from Sept Iles, became operational during 1962. The 25-mile railway from Pointe Noire to Mile 8 on the Quebec North Shore and Labrador Railway was also completed to establish rail service to the mine area. Wabush Mines had participated with Iron Ore Company of Canada in the construction of the 38-mile line from the Wabush area to Mile 224. Both companies participated with British Newfoundland Corporation Limited, in financing the construction of hydro-electric facilities at Twin Falls, Labrador. At Wabush Lake, mine development, plant construction and townsite building continued.

Jubilee Iron Corporation indicated tentative plans to mine and possibly smelt ore from one of its concentrating-grade deposits in the Wabush Lake area if markets and financing could be arranged.

#### Quebec-Labrador (Newfoundland)

Iron Ore Company of Canada's mining operations in the Schefferville Quebec area astride the Quebec-Labrador border, operated at a favorable level compared with 1961. The company continued its extensive ore-research program and a decision may be made in 1963 to beneficiate part of the Schefferville production. Since 1960, the company has operated an ore-drying plant at Sept Iles to treat about 1.2 million tons of ore a year. At Sept Iles the company commenced a \$3-million expansion to include an additional stockpile and loading and harbor facilities for the movement of concentrate and pellets.

#### Quebec

Quebec Cartier Mining Company operated at a markedly improved rate, particularly during the second half of 1962. Initial production from the company's \$350-million project commenced in July 1961. The project includes development of a mine to produce 20 million tons of crude ore annually, a concentrator to produce 8 million tons annually, a 193-mile railway, a stockpile and boat-loading facilities, and two new towns - Port Cartier and Gagnon. The

deposit being mined is one of several held by the company from Lac Jeannine northward to Mount Reed and then to Mount Wright.

Hilton Mines, Ltd. operated close to the record established in 1961. The company has taken a greater interest in outside exploration during recent years to augment its limited ore reserves.

Quebec Iron and Titanium Corporation operated its Lac Tio mine and Sorel Smelter at approximately 25 per cent under the record level set in 1961. The workers at Sorel went on strike on August 28 and by year-end no settlement had been reached.

## Ontario

Algoma Ore Properties Division of The Algoma Steel Corporation, Limited, shipped about the same tonnage of sinter as in 1961. A trend to declining merchant ore sales in recent years has resulted in a greater amount of production being shipped to the company's blast furnaces at Sault Ste. Marie. Since the new underground MacLeod mine was brought into production in 1960, the company's main crude ore source has shifted from the Helen and Victoria underground mines, which have been closed, and the Sir James open pit. To improve blast-furnace operations the company installed a \$2-million screening plant at Wawa to produce a sinter product 3/8-inch in size or over. Research on various methods of beneficiating crude ore continued.

In the Steep Rock Lake area, 140 miles west of Port Arthur, shipments by Steep Rock Iron Mines Limited declined to the annual production rates in effect prior to 1949. The Hogarth open pit was depleted early in 1962 and the Roberts open pit ('G' Orebody) became the prime source of ore, after seven years of dredging and other development work. The company commenced construction and installation of a \$4.5-million crushing, screening, stockpile and conveyor-belt system to transport Roberts ore from the pit to either a new railway loading pocket or to the North concentrator. The Errington underground mine continued to produce from experimental stopes. The company continued its extensive ore-research program which could result in a decision to instal additional beneficiation facilities.

Caland Ore Company Limited, with initial production in 1959, became the largest ore producer in the Steep Rock area. The operation ran smoothly in 1962 with no abnormal operating problems.

Canadian Charleson, Limited, two miles south of Steep Rock Lake, resumed mine production after being idle in 1961 when only small shipments were made from stockpile.

Lowphos Ore, Limited, commenced construction of a pelletizing plant, scheduled for completion in September 1963, to process 600,000 tons of concentrate annually. Since 1959, concentrates have been shipped elsewhere for treatment.

Because of smaller requirements by the parent company, Marmoraton Mining Company, Ltd., shipped a smaller amount of pellets than in 1961.

The International Nickel Company of Canada, Limited, continued with plans to triple its present plant capacity by 1963 to about 750,000 tons of high-grade pellets a year. The plant would then treat 1.2 million short tons of nickeliferous pyrrhotite concentrate a year. Ore shipments were about the same as in 1961.

Noranda Mines, Limited operated its Cutler plant at a low rate in 1962. Sale of the Cutler plant to Canadian Industries Limited was completed in October. A new company, Cutler Acid Limited, was formed by CIL to operate the plant.

Jones & Laughlin Steel Corporation proceeded with mine development and plant construction to produce one million tons of pellets annually at its \$30-million project near Kirkland Lake, Ontario. The project is scheduled for production in 1964.

### Prairie Provinces

Because of the possible need for additional raw materials for steel-making the tempo of iron-ore exploration in the Prairie Provinces increased in 1962. Peace River Mining & Smelting Ltd. continued to evaluate various means of beneficiating and transporting ore from the Peace River area of Alberta. The deposits were previously controlled by Premier Steel Mills Ltd., a company which The Steel Company of Canada, Limited, acquired early in 1962; the iron deposits were not included in the acquisition.

### British Columbia

During the year, three companies commenced production - Brynnor Mines Ltd., in May, Zeballos Iron Mines Limited, in June, and Jedway Iron Ore Limited, in September. Of the three previous producers Texada Mines Ltd. and Nimpkish Iron Mines Ltd. produced at a high rate whereas Empire Development Company, Limited's deposits approached depletion. For the five companies, contracts call for total shipments to Japan of nearly two million tons a year.

The Consolidated Mining and Smelting Company of Canada Limited operated its sinter plant and electric pig-iron furnace at near-capacity. The company also proceeded with a \$4-million program to add a second pig-iron furnace that will increase production from 36,000 to 100,000 tons a year. Construction will be completed in 1964.

Texada Mines Ltd. commenced development of underground reserves in March 1962, for production in the latter part of 1963. By that time open-pit mining will have almost ceased.

### Yukon

Crest Exploration Limited, a subsidiary of The California Standard Company, announced the discovery of a multi-billion ton iron occurrence in the Snake River area near the Northwest Territories border at about 65°N. The company is undertaking a preliminary but comprehensive study of the potential of the deposit.

## PRICES AND TARIFFS

Traditionally, prices received by most Canadian iron-ore producers in Ontario and Quebec for shipments made to Canadian and United States consumers reflect the Lake Erie price, that is, the price paid per long ton of iron ore delivered at the rail vessel at Lake Erie ports. The Canadian mine price can be approximated by deducting the appropriate handling charges and transportation charges. The Lake Erie price is based on a natural iron content of 51.5

TABLE 6

LAKE ERIE BASE PRICES, 1950-62  
(Mesabi Non-Bessemer Grade)

Year	Per Long Ton (\$ US)	Per Long Ton Unit (\$ US)
1950	7.70	0.1495
1951	8.30	0.1612
1952 (to July)	8.30	0.1612
1952	9.05	0.1757
1953 (to July)	9.70	0.1884
1953-54	9.90	0.1922
1955	10.10	0.1961
1956	10.85	0.2107
1957-61	11.45	0.2223
1962	10.65	0.2068

per cent and various other specifications regarding physical and chemical properties. Despite increasing production costs, which in many cases have not been offset by increased productivity, the Lake Erie price remained stable from 1957 to early 1962. In April 1962, the price for traditional medium-grade ores declined by about seven per cent. This price decrease reflects increased supplies from Canada and overseas countries and the trend toward lower ore prices in international markets particularly in western Europe. Late in 1962, it was announced that prices for Swedish ores in Europe in 1963 would be about seven per cent less than in 1962; this is a decline similar to that announced toward the end of 1961. These decreases are reflected in most ore sales contracts with suppliers in other countries and could have a further depressing effect on the Lake Erie price.

There are no tariffs on iron ore in any country with which Canada trades. In January 1959, the United States Tariff Commission held public hearings on competition and the effects of iron-ore imports on the United States iron-mining industry. At the time, no opposition to imports was voiced but in October 1960 the Commission held further public hearings to determine whether, owing to the customs treatment accorded under the General Agreement on Tariffs and Trade, iron-ore imports had seriously injured the domestic iron-mining industry. If the Commission had found evidence of serious injury it would have been bound to recommend restrictive measures against imports. Early in 1961, however, it ruled that iron-ore imports had not injured the domestic industry. Since that time, various senate committees have been requested to initiate some form of protection against imports. This situation, although not critical, warrants recognition by Canadian exporters.

This is one of the 58 preliminary mineral reviews that, when updated, will be published as a permanent record in the Canadian Minerals Yearbook, 1962. The reviews, issued between the second and third quarters of 1963, plus the final Yearbook, may be purchased as an annual loose-leaf service from The Queen's Printer at \$10 a year. Reviews may also be purchased separately for 25 cents each, and the Yearbook for \$5 a copy. A quality ring binder for the reviews is available for an additional \$5.00. Address all inquiries to the Queen's Printer, Ottawa.

TABLE 7

## CANADIAN PRODUCERS OF IRON ORE DURING 1962

Company and Property Location	Participating Companies	Product Mined (average natural grade)	Product Shipped (average natural grade)	Shipments (a)	
				1962	1961
The Algoma Steel Corp., Ltd. Algoma Ore Properties Division; mines and sinter plant near Wawa, Ont.	Wholly owned	Siderite from open pit and underground mines (34.3% Fe)	Ore beneficiated by sink-float and sintered (50.64% Fe, 2.84% Mn)	1,561	1,634
Brynmor Mines Ltd., near Kennedy Lake, Vancouver Island, B.C.	Noranda Mines, Ltd.	Magnetite from open pit mine (54.5% Fe)	Magnetite concentrate (61.4% Fe)	410	
Caland Ore Co. Ltd.; E. arm of Steep Rock Lake, N. of Atikokan, Ont.	Inland Steel Co.	Hematite and goethite from open pit mines (53.76% Fe)	Direct-shipping ore (53.74% Fe)	2,005	1,009
Canadian Charleson, Ltd.; S. of Steep Rock Lake, near Atikokan, Ont.	Oglebay Norton Co.	Hematite-bearing gravels (12-20% Fe)	Jig and spiral con- centrate (55.13% Fe)	119	18
Empire Development Co., Ltd.; Benson R., 25 miles SW of Port McNeill, Vancouver, B.C.	Loram Ltd.; Quatsino Copper-Gold Mines, Ltd.	Magnetite from open pit mine (32.7% Fe)	Magnetite concentrate (56.49% Fe)	22	265
Hilton Mines, Ltd.; near Bristol, Que., 40 miles NW of Ottawa	The Steel Co. of Canada, Ltd.; Jones & Laughlin Steel Corp.; Pickands Mather & Co.	Magnetite from open pit mine (approximately 20% Fe)	Iron oxide pellets (66.28% Fe)	780	800

Iron Ore Company of Canada; near Schefferville, Que.	The M.A. Hanna Co.; The Hanna Mining Co.; Hollinger Cons. Gold Mines, Ltd.; ARMCO Steel Corp.; Bethlehem Steel Corp.; National Steel Corp.; Republic Steel Corp.; Wheeling Steel Corp.; Youngstown Sheet and Tube Co.	Hematite-goethite from open pit mines (53.08% Fe)	Direct-shipping ore (54.75% Fe)	9,797d	7,444d
Iron Ore Company of Canada; near Labrador City, Nfld.	Same as above	Specular hematite from open pit mine (36.1% Fe)	Specular hematite concentrate (approx. 63.69% Fe)	740	-
Jedway Iron Ore Ltd.; Moresby Island, Queen Charlotte Is., B.C.	The Granby Mining Co. Ltd.	Magnetite from open pit mine (42.2% Fe)	Magnetite concen- trate (58.47% Fe)	48	-
Lowphos Ore, Ltd.; Sudbury area, 20 miles N. of Capreol, Ont.	National Steel Corp.; The Hanna Mining Co.	Magnetite from open pit mine (31.54% Fe)	Magnetite concen- trate (60.04% Fe)	401	578
Marmoraton Mining Co, Ltd.; near Marmora, in southern Ont.	Bethlehem Steel Corp.	Magnetite from open pit mine (35-37% Fe)	Iron oxide pellets (64.4% Fe)	408	529
Nimpkish Iron Mines Ltd.; 26 miles W. of Beaver Cove, Vancouver Is., B.C.	International Iron Mines Ltd.; Standard Slag Co.	Magnetite from open pit mine (41.6% Fe)	Magnetite concen- trate (58.6% Fe)	324	378
Quebec Cartier Mining Co.; Gagnon, Que.	United States Steel Corp.	Specular hematite from open pit mine (31.0% Fe)	Specular hematite concentrate (64.5% Fe)	4,620	1,240

Iron ore

Table 7 (Cont'd.)

Company and Property Location	Participating Companies	Product Mined (average natural grade)	Product Shipped (average natural grade)	Shipments (a) ('000 long tons) 1962 1961
Steep Rock Iron Mines Ltd.; Steep Rock Lake N. of Atikokan, Ont.	The Premium Iron Ores Ltd.; Cleveland-Cliffs Iron Co., and others	Hematite-goethite from open pit and under- ground mines (50.98% Fe)	Direct-shipping ores and gravity concen- trate (54.07% Fe)	963 1,214
Texada Mines Ltd.; Texada Island, B.C.	Private company	Magnetite from open pit mine (42.03% Fe)	Magnetite concen- trate (61.81% Fe)	537 446
Dominion Steel and Coal Corp., Ltd., Wabana Mines Division; Bell Island, Conception Bay, E., coast of Nfld.	Wholly owned	Hematite-chamosite from underground and open pit mines (48.55% Fe)	Heavy-media concen- trate (50.60% Fe)	1,275 2,292
Zeballos Iron Mines Ltd.; near Zeballos, Vancouver I., B.C.	International Iron Mines Ltd.	Magnetite from open pit mine (48% Fe) <sup>e</sup>	Magnetite concen- trate (plus 60% Fe) <sup>e</sup>	200 <sup>e</sup>
By-product Producers				
The Consolidated Mining and Smelting Co. of Canada Ltd., Kimberley, B.C.	Wholly owned	Pyrrhotite flotation con- centrates are roasted for acid production. Calcine is pelletized and sintered (65.4% Fe)	Iron oxide pellets (65.0% Fe) are further processed into pig iron at the plant	43 41

Falconbridge Nickel Mines, Ltd.; Sudbury area, Ont.	Wholly owned	Pyrrhotite flotation concentrates	Iron oxide calcine (67-68% Fe) <sup>e</sup>	na.	-
International Nickel Co. of Canada, Ltd.; the mines and plant in Sudbury area, Ont.	Wholly owned	Pyrrhotite flotation concentrates treated	Iron oxide pellets (68% Fe)	257	231
Noranda Mines, Ltd.; mines near Noranda, Que.; plant at Outler, Ont.	As of Nov. 1, 1962, owned by Outler Acid Limited, a new subsidiary of Canadian Industries Limited.	Pyrrhotite and pyrite flotation concentrates treated	Iron oxide calcine (64-66% Fe)	37b	57b
Quebec Iron and Titanium Corp.; mine in Allard Lake area, Que.; electric smelter at Sorel, Que.	The Kennecott Copper Corp., New Jersey Zinc Co.	Ilmenite-hematite from open pit mine (40% Fe, 35% TiO <sub>2</sub> )	TiO <sub>2</sub> slag and various grades of desulphurized iron or remelted iron <sup>a</sup>	660c	1,032c

Source: Company reports, personal communications and other sources.

(a) Statistics supplied by the companies to the Mineral Resources Division.

(b) Production.

(c) Ilmenite consumed.

(d) Under the lease agreement with Hollinger North Shore Exploration Company Limited and Labrador Mining and Exploration Company Limited, Iron Ore Company of Canada mines ore, included in the total figures, for the account of the two concession companies. Shipments in 1962 were 761,278 tons and 738,721 tons, respectively.

Symbols: na Not available; e Estimate; - Nil.

TABLE 8

## COMPANIES UNDER DEVELOPMENT WITH ANNOUNCED PLANS FOR PRODUCTION

Company and Expected Production Date	Property Location	Participating Companies	Product to be Mined	Product to be Shipped	Expected Annual Production
Carol Pellet Company (mid-1963)	Adjacent to Iron Ore Co. of Canada's concentrator, Labrador City, Labrador.	United States participants of Iron Ore Co. of Canada (See Table 7)	Company's plant to be operated by IOCC to process concentrate into pellets.	Pellets (64-65% Fe)	5.5 million long tons
Jones & Laughlin Steel Corp. (1964)	Boston twp., near Kirkland Lake, Ont.	Wholly owned	Magnetite iron formation from open pit mine (25% Fe)	Pellets (65-66% Fe)	1,000,000 long tons
Lowphos Ore, Limited (1963)	20 miles north of Capreol, Ont.	The National Steel Corp.; The M.A. Hanna Co.	Magnetite concentrate to be used	Pellets (65-66% Fe)	Pellet plant being added to concentrator.
Wabush Mines, Pickands Mather & Co., Managing agent (1964-65)	Wabush Lake, near Labrador City, Lab., 190 miles N. of Sept Iles	As of Nov. 1, 1961: The Steel Co. of Canada Ltd., Dom. Foundries and Steel, Ltd., Mannesmann Canadian Iron Ores Ltd., Hoesch Iron Ores Ltd. and Wabush Iron Co. Ltd. (Youngstown Sheet and Tube Co., Inland Steel Co., Interlake Iron Corp., Pittsburgh Steel Co., Finsider of Italy and Pickands Mather & Co.)	Specular-hematite iron formation from open pit mine (37% Fe)	Concentrate and possibly pellets (64-65% Fe)	5,500,000 long tons. Test shipments of concentrate: 1960, 42,000 tons; 1961, 55,000 tons.

By-Product Producers			
The Consolidated Mining and Smelting Co. of Canada Ltd. (1964)	Kimberley, B.C.	Wholly owned	nil
			Electric furnace pig iron capacity being increased to 100,000 short tons.
The International Nickel Co. of Canada, Ltd. (1963)	Mines and plant in Sudbury area, Ont.	Wholly owned	nil
			Pyrrhotite flotation concentrates to be used.  Iron oxide pellets (68% Fe)  Capacity being increased to 750,000 long tons.

Sources: Company reports, personal communications, and other.

